LA-UR-21-23231
Approved for public release; distribution is unlimited.

Title: COVID-19 and Machine Learning: Preliminary Exploration

Author(s): Vesselinov, Velimir Valentinov
Middleton, Richard Stephen (Richard)
Talsma, Carl James
Solander, Kurt C.

Intended for: Web

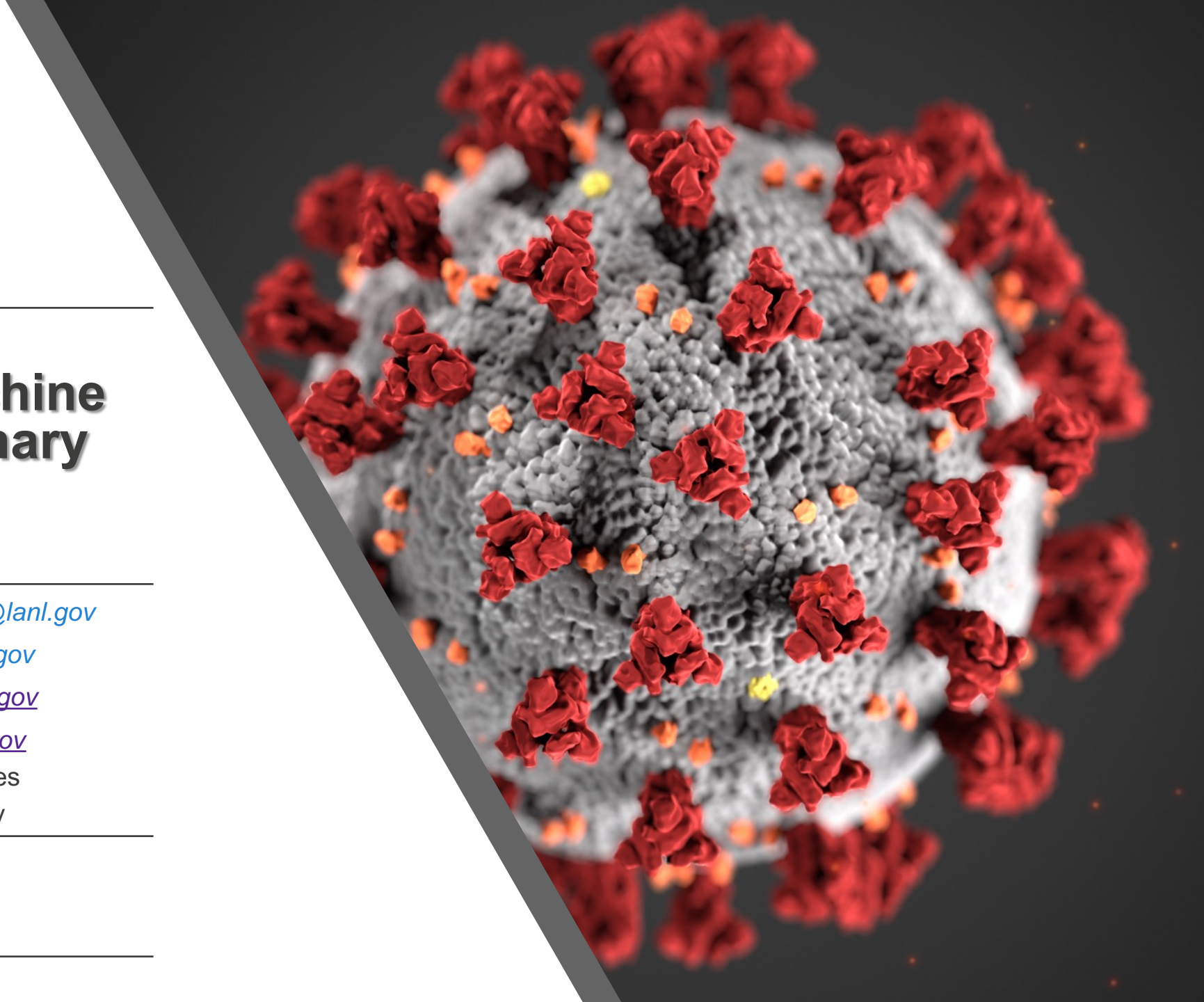
Issued: 2021-04-05

Los Alamos
NATIONAL LABORATORY
EST. 1943

COVID-19 and Machine Learning: Preliminary Exploration

Velimir "Monty" Vesselinov *vvv@lanl.gov*
Richard Middleton *rsm@lanl.gov*
Kurt Solander *ksolander@lanl.gov*
Carl Talsma *talsmac83@lanl.gov*
Earth and Environmental Sciences
Los Alamos National Laboratory

May 31st, 2020

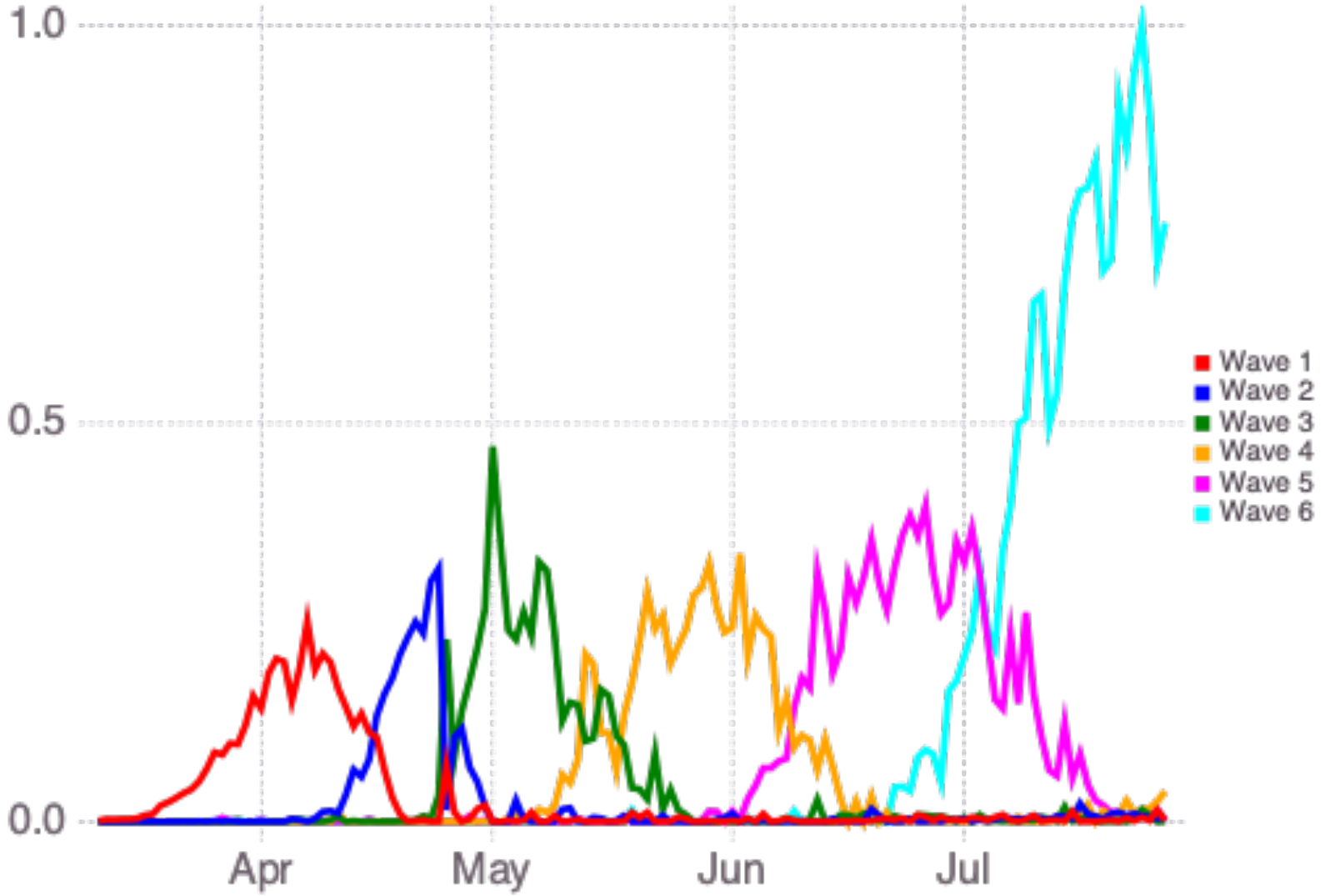


LA-UR-20-23556

ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Cases

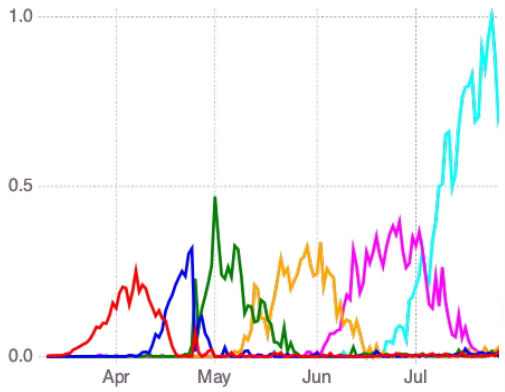
- 6 “Cases” Waves

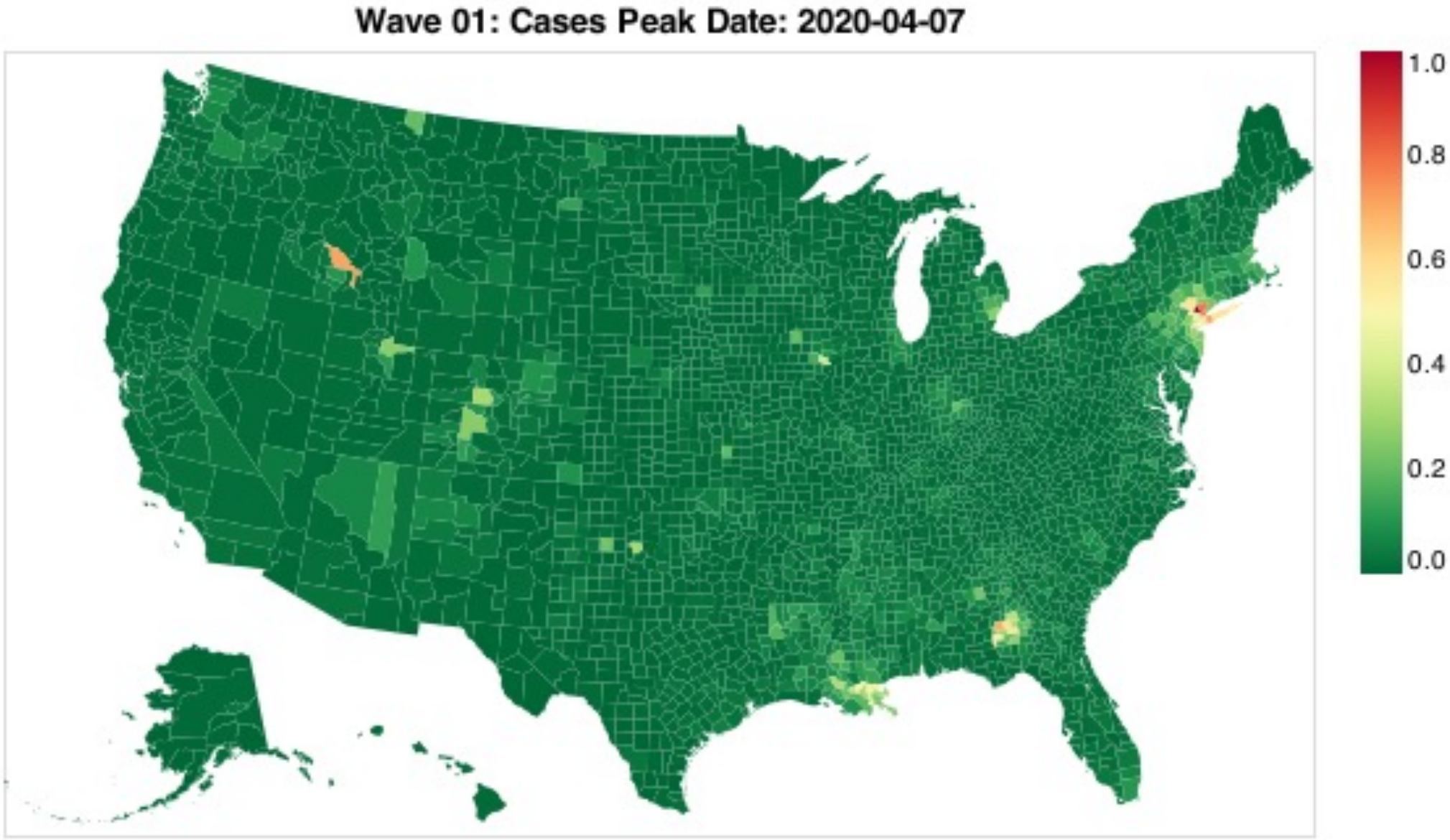


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Cases

- 6 “Cases” Waves

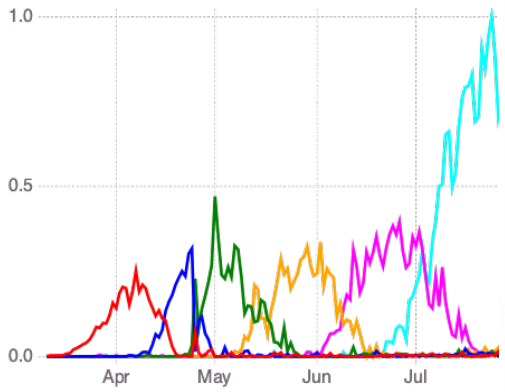


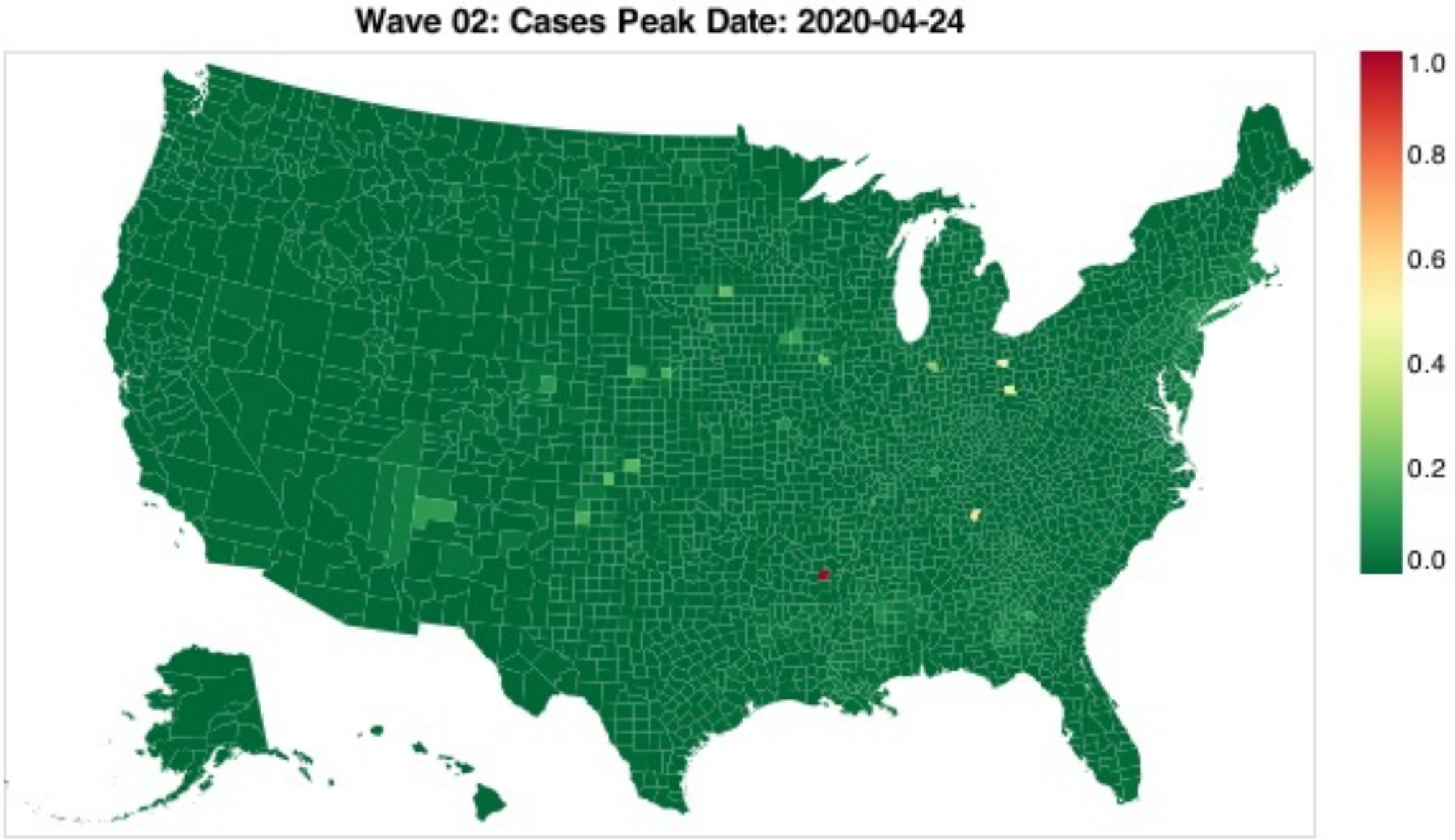


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Cases

- 6 “Cases” Waves

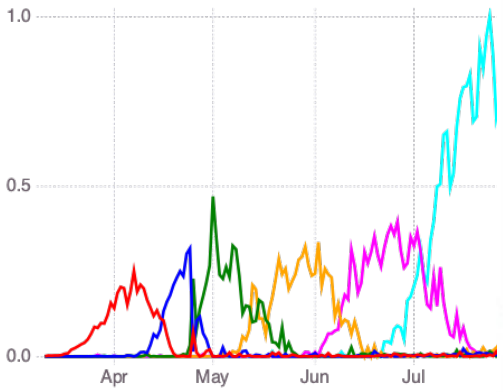


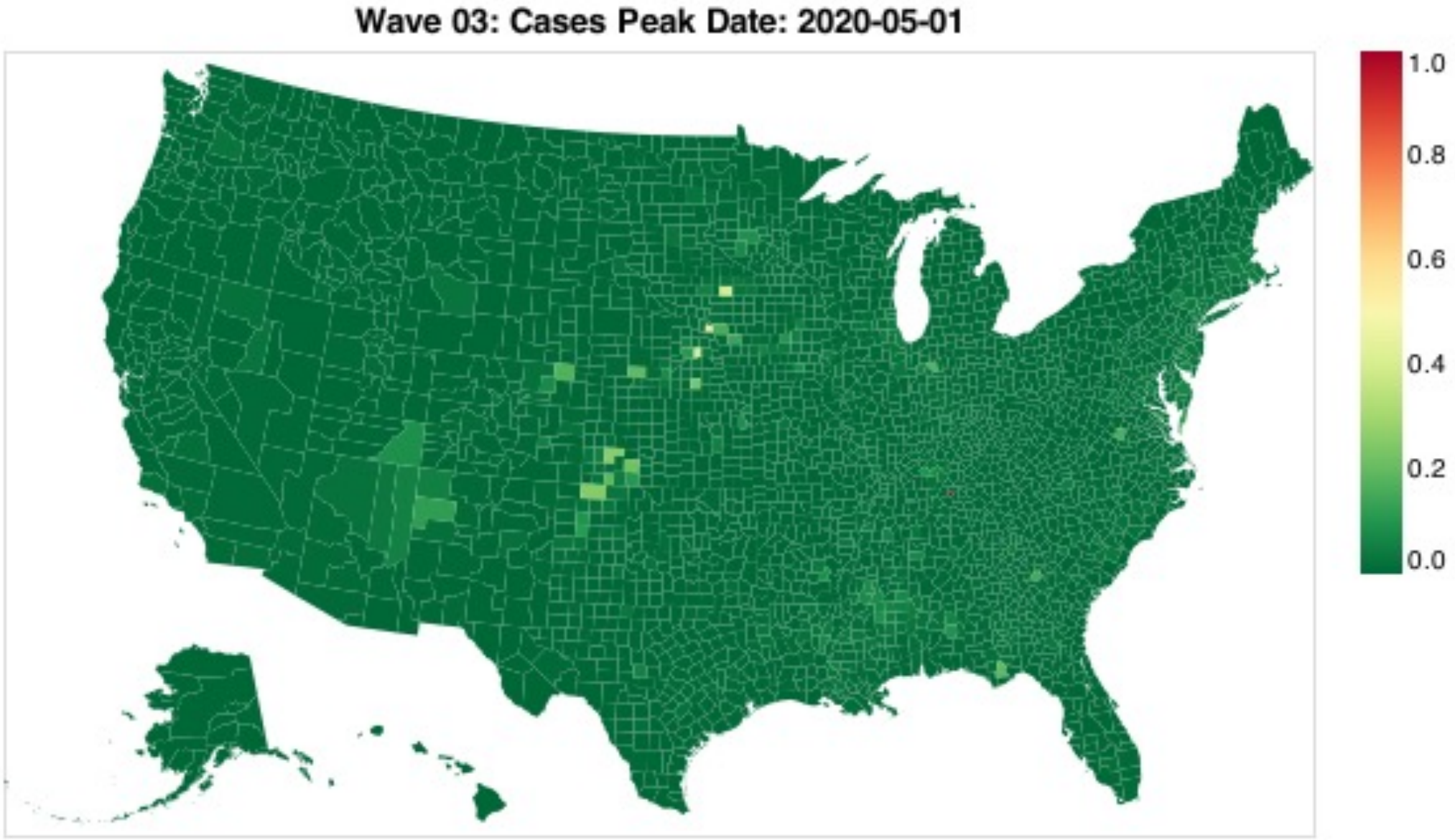


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Cases

- 6 “Cases” Waves

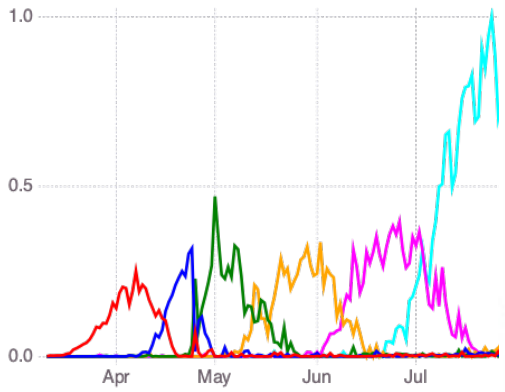


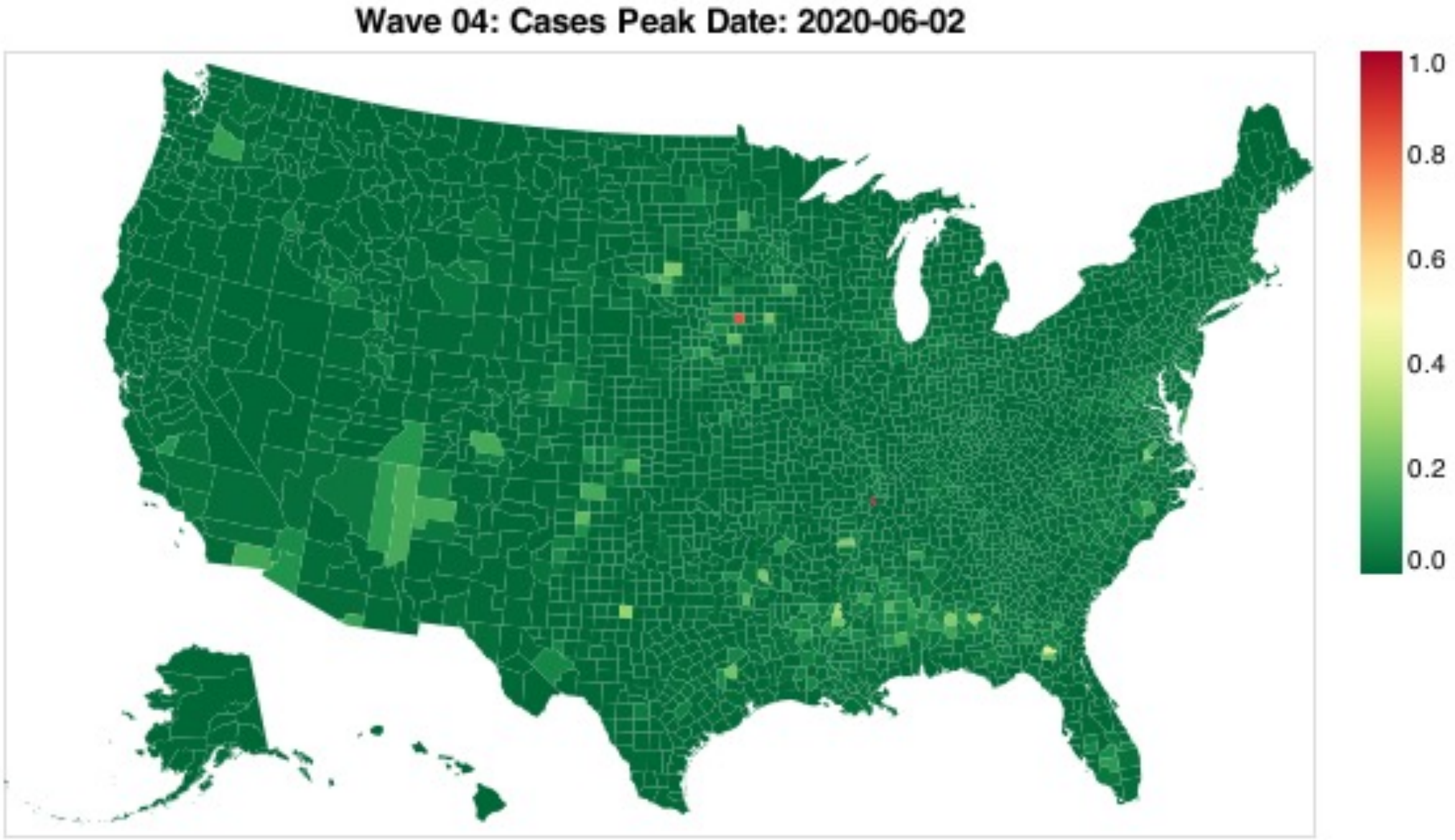


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Cases

- 6 “Cases” Waves

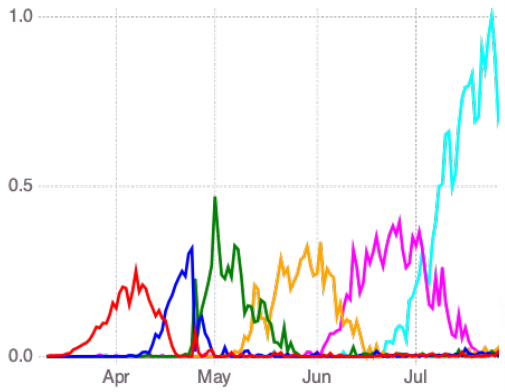


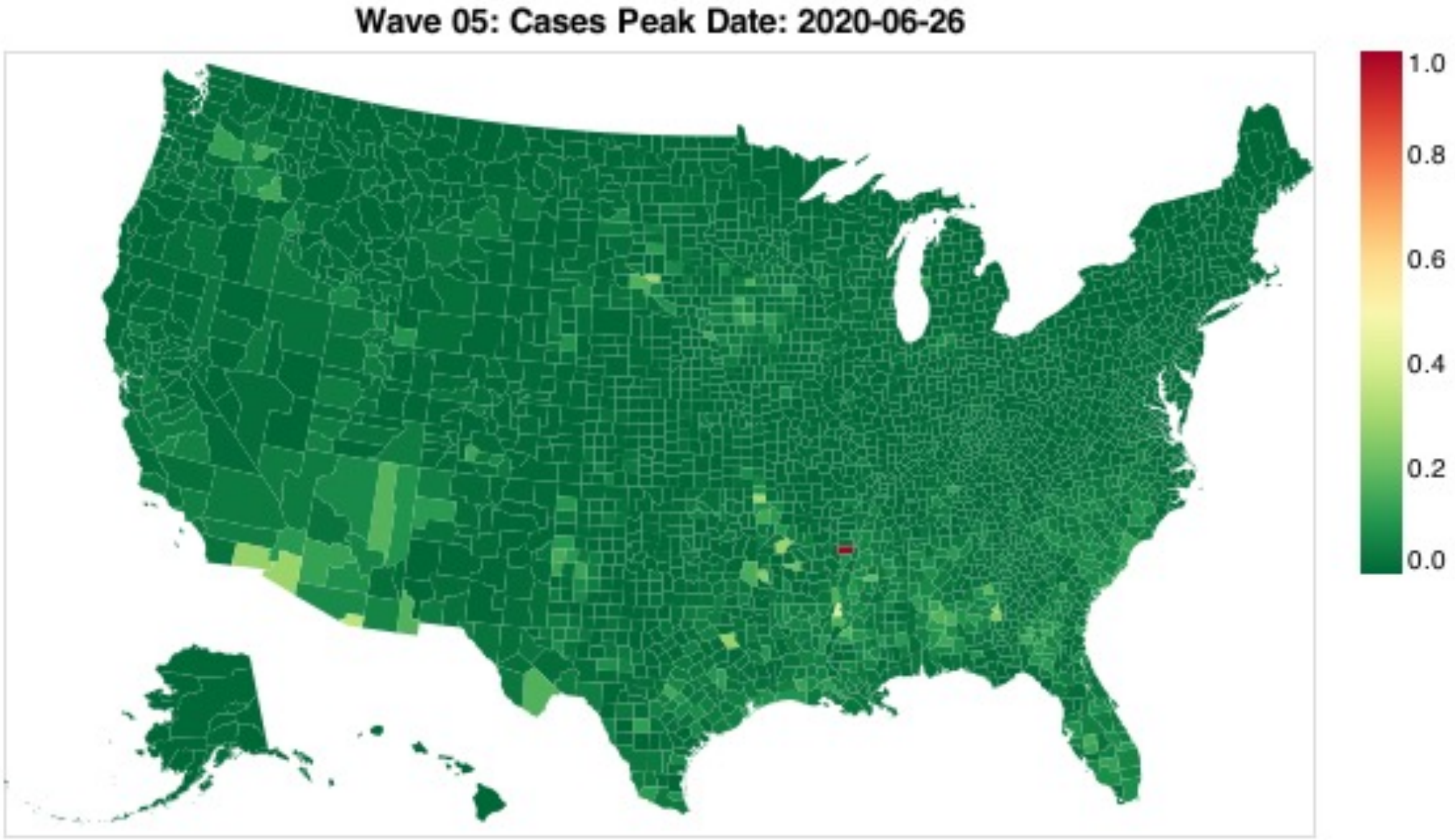


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Cases

- 6 “Cases” Waves

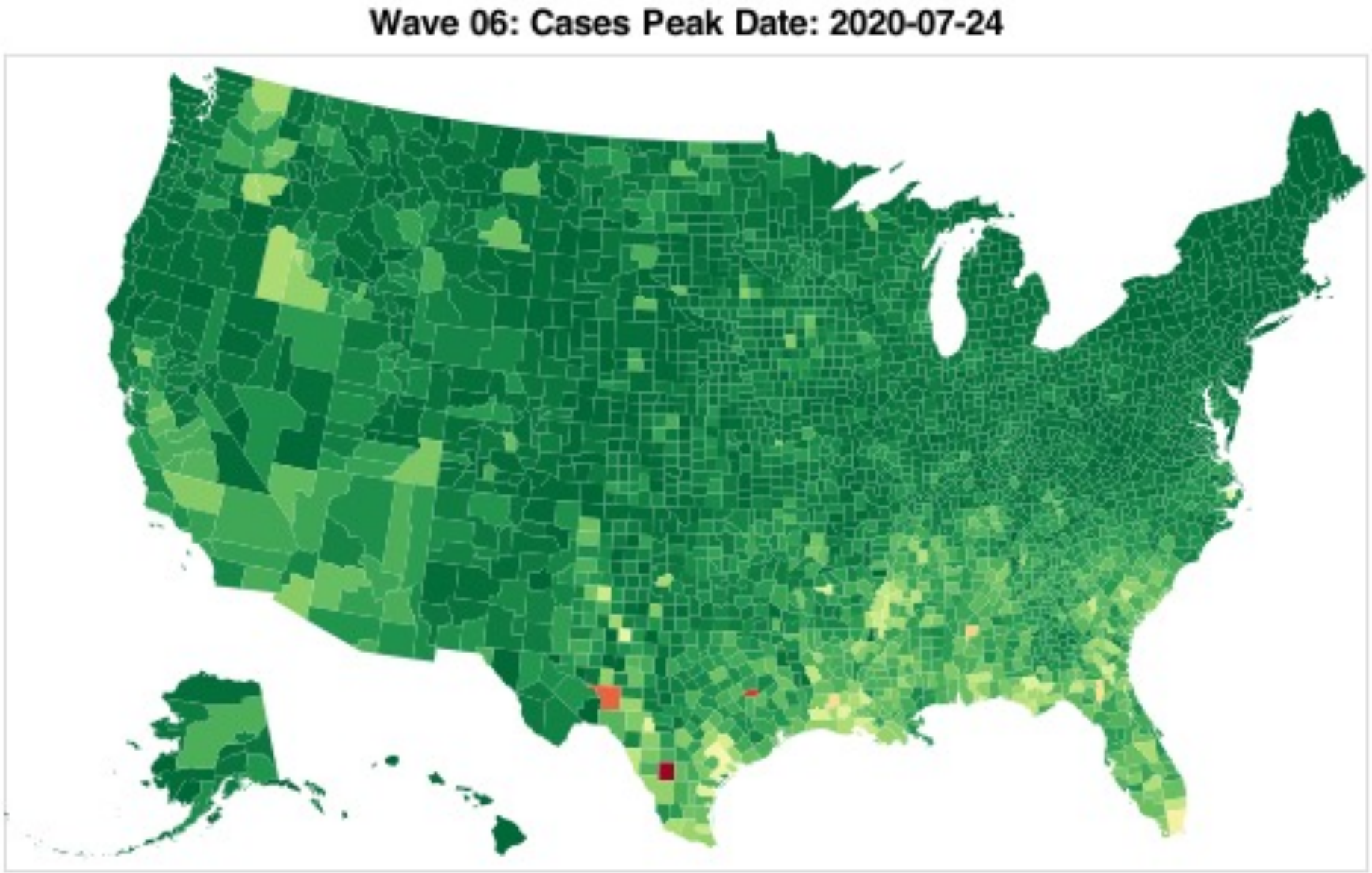


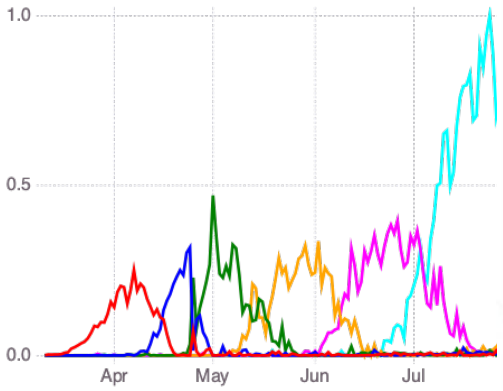


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Cases

- 6 “Cases” Waves

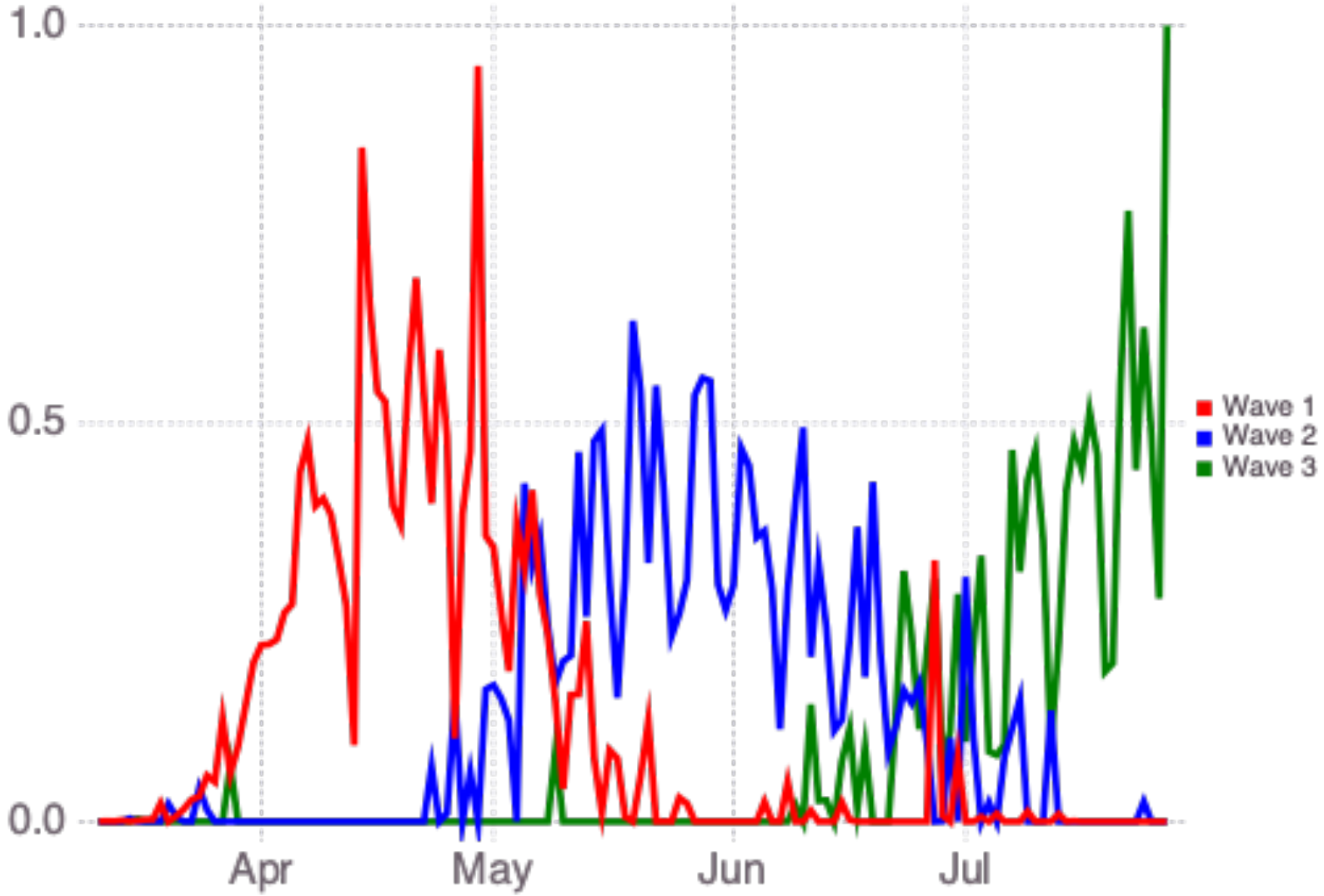




ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Deaths

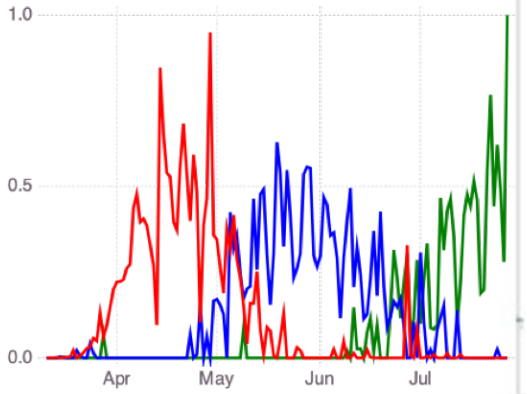
- 3 “Deaths” Waves

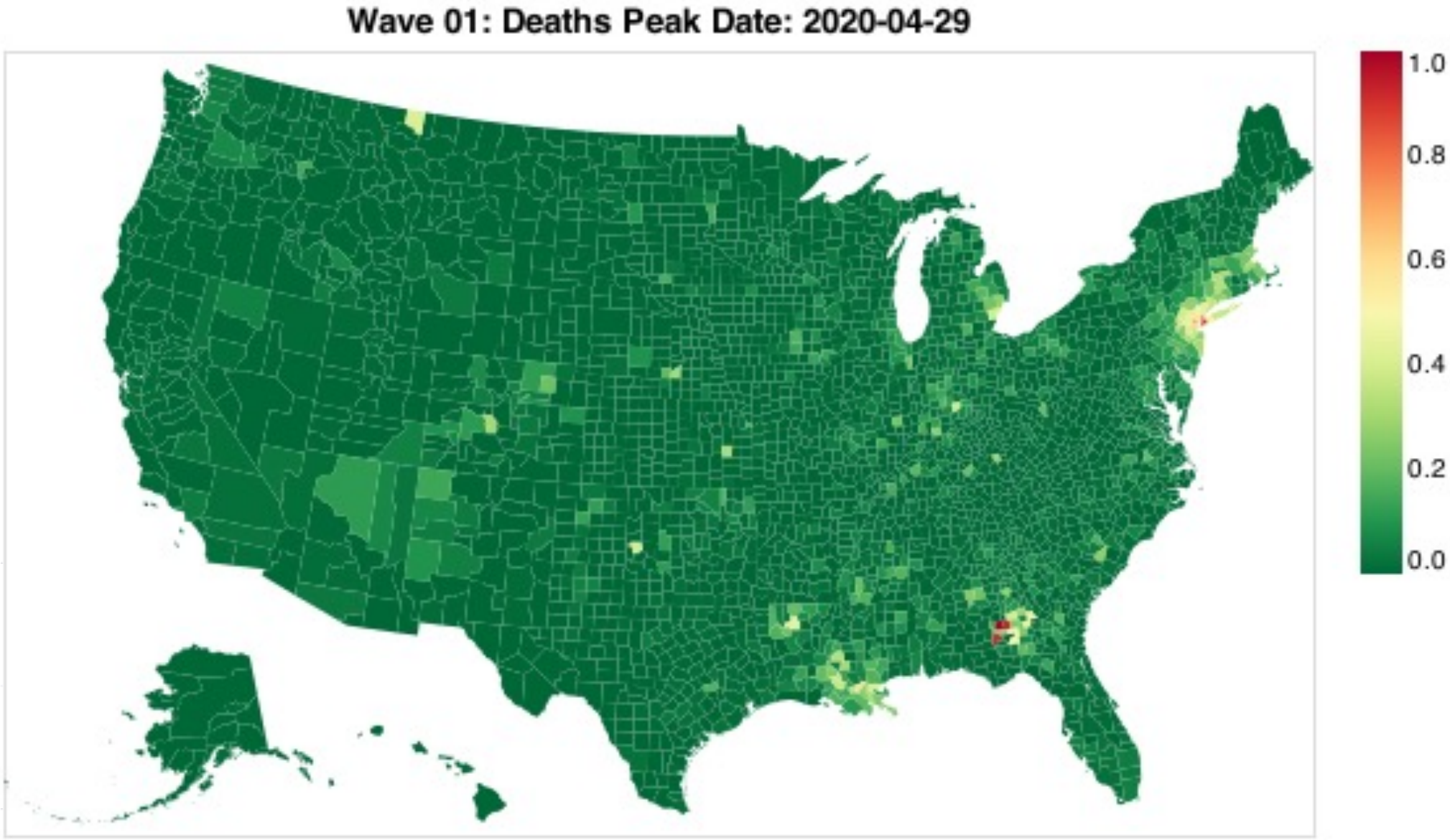


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Deaths

- 3 “Deaths” Waves

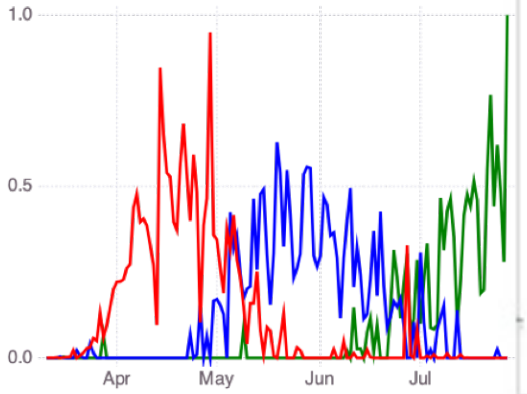


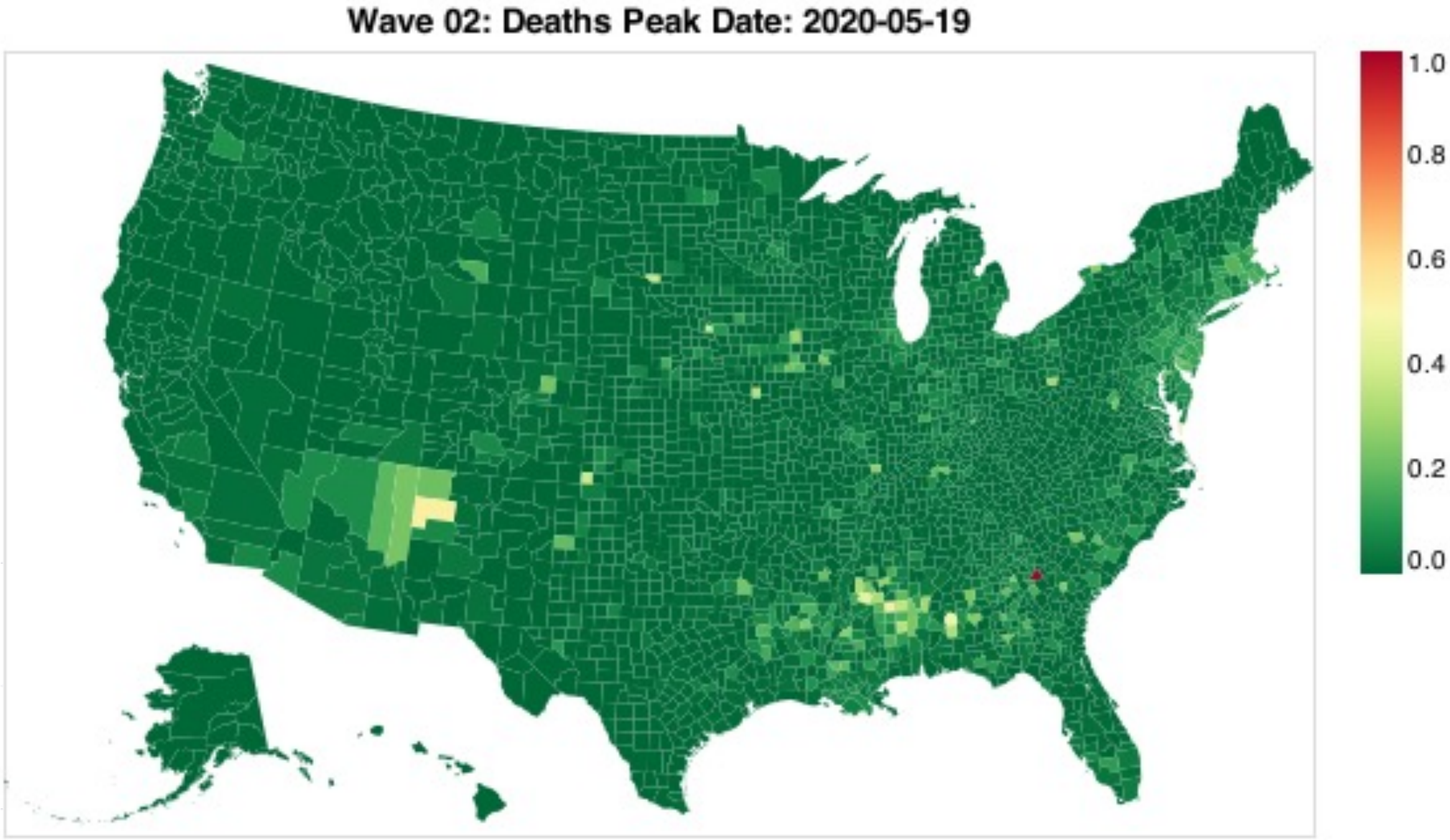


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Deaths

- 3 “Deaths” Waves

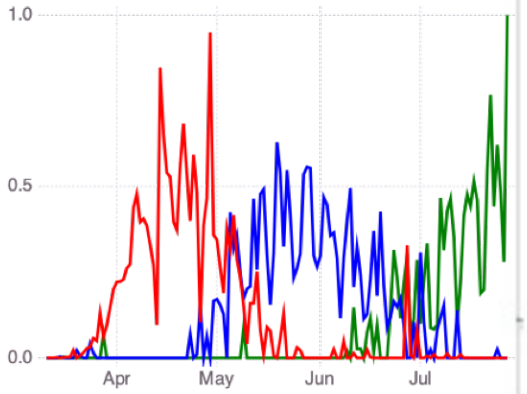


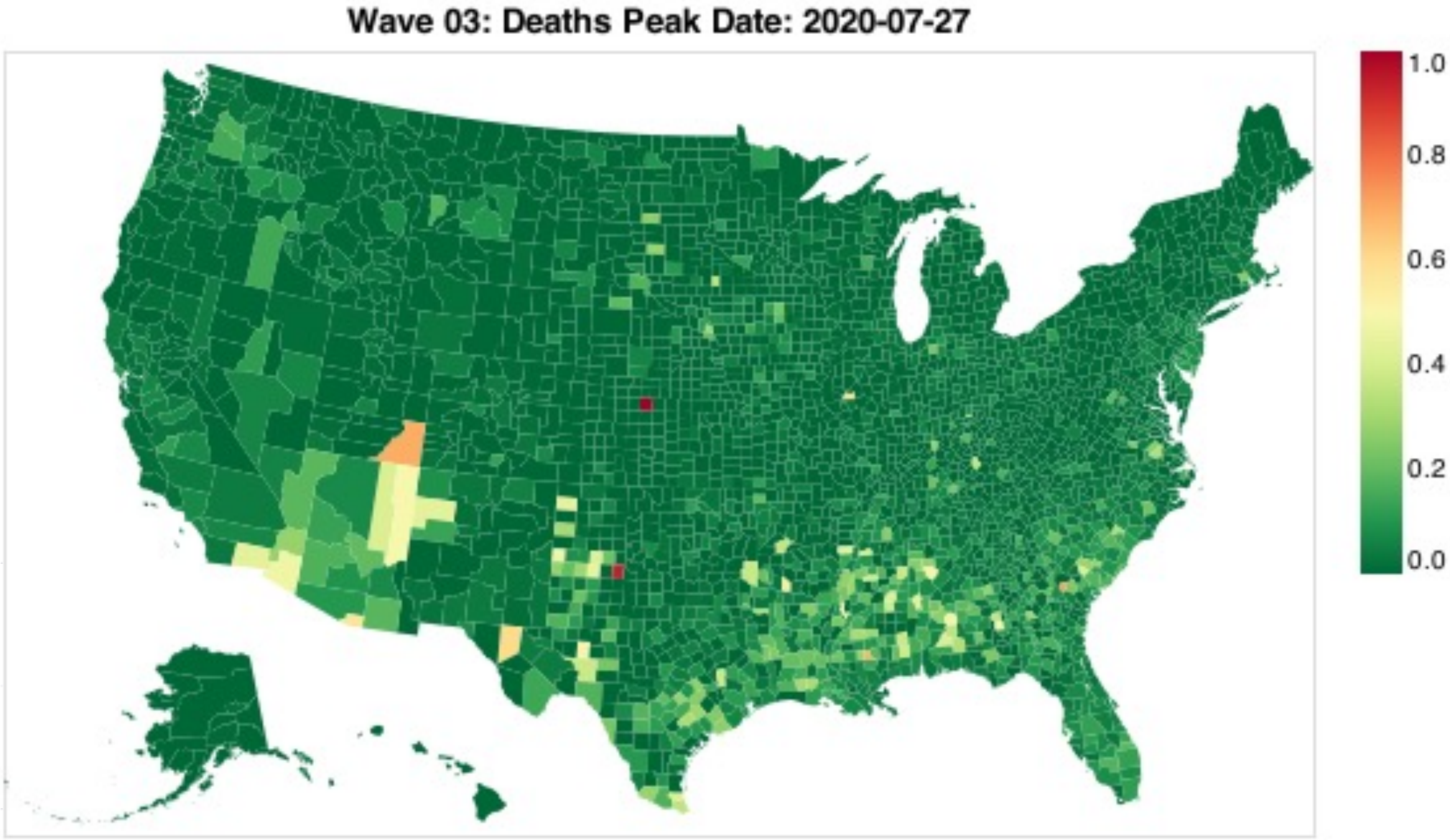


ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020): Deaths

- 3 “Deaths” Waves

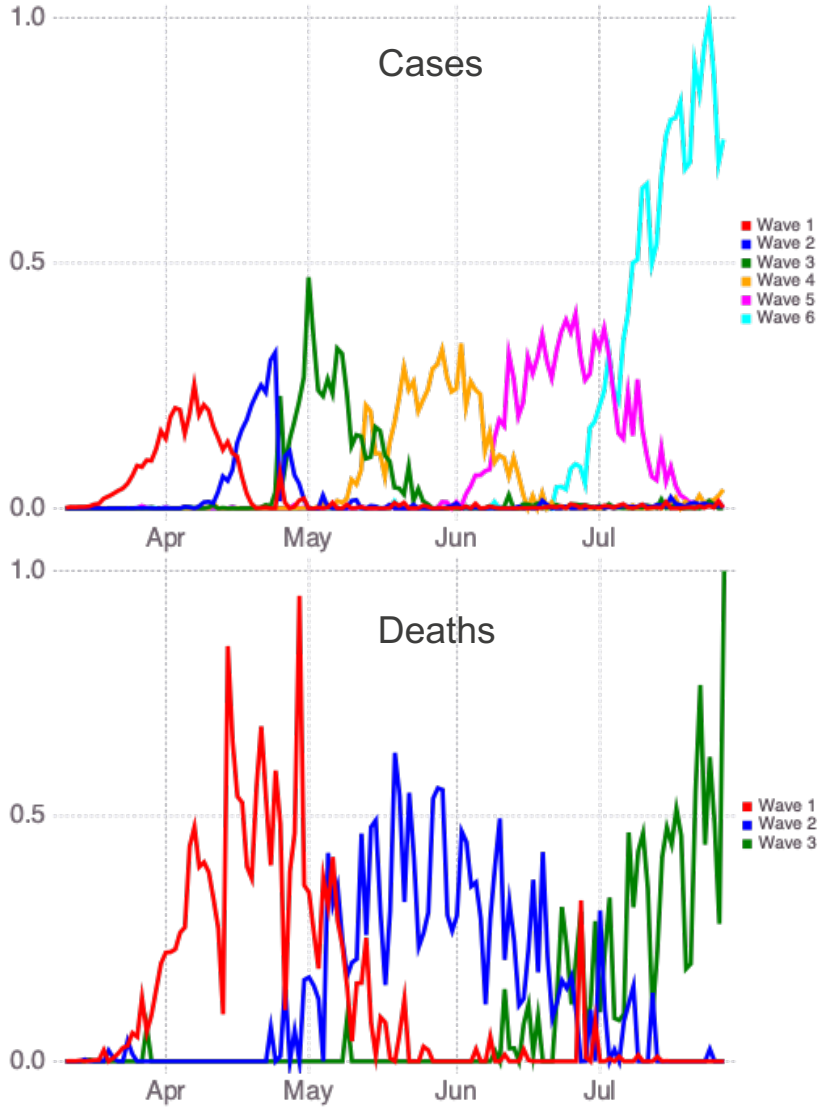




ML & COVID-19: Transient analyses

Preliminary Results (July 27, 2020)

- 6 “Cases” Waves
- 3 “Deaths” Waves



ML & COVID-19: Further analyses

Future work

- Categorize counites based on:
  - Static data
  - Cases transients
  - Deaths transients
- Develop predictive ML model
- Train and verify the ML model based on categorized counties